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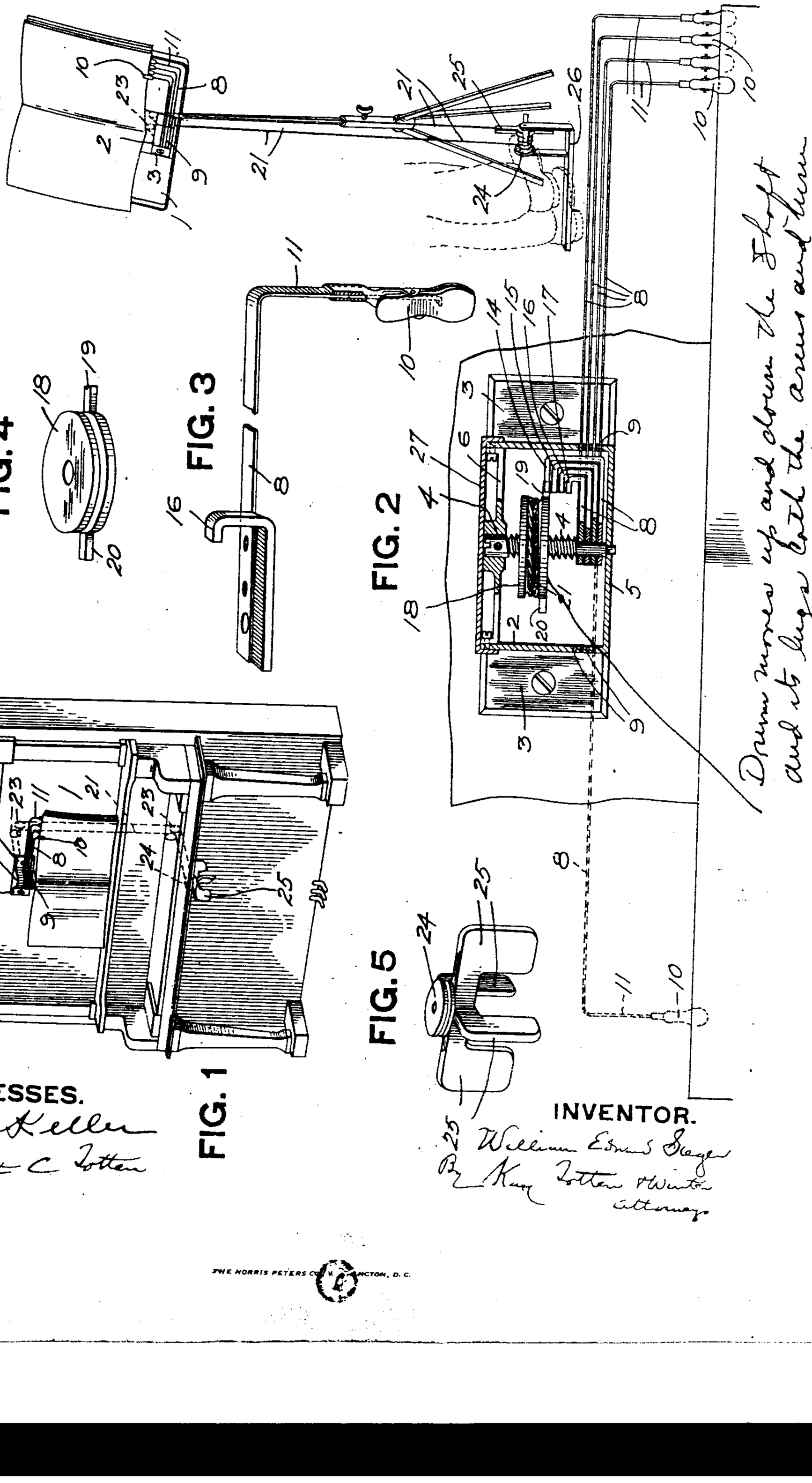
W. E. SIEGER.

LEAF TURNER.

APPLICATION FILED JAN. 6, 1905.

FIG. 6



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LEAF-TURNER.

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Application filed January 6, 1905. Serial No. 239,873.

To all whom it may concern:

Be it known that I, WILLIAM EDWARD SIEGER, a resident of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Leaf-Turners; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to leaf-turning devices, and especially to devices for turning the leaves of music on the music-desk of pianos, organs, or other instruments or on music-stands.

The object of my invention is to provide a device of this character which is simple of construction and efficient in operation and which can be readily operated by the performer with the foot or knee.

The invention consists in details of construction and arrangement hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a perspective diagrammatic view showing the invention applied to the music-desk of a piano or similar instrument. Fig. 2 is a vertical section of the turning device itself on an enlarged scale. Fig. 3 is a perspective view of one of the arms. Fig. 4 is a perspective view of the drum. Fig. 5 is a similar view of the operating member, and Fig. 6 is a diagrammatic view illustrating the application of the device to a music-stand.

My device can be applied to a music-stand or to the desk of a piano, organ, or similar instrument or, in fact, to any other suitable music support or desk. In the drawings I have shown the same applied to a piano in Fig. 1 and to a music-stand in Fig. 6.

The music-desk of the piano is indicated at 1, and the turning device will preferably be secured thereto, although it may be secured to a separate base-board, if desired. The device itself comprises a suitable frame or casing 2, preferably made in the form of a casing so that it can be entirely inclosed, thus protecting the mechanism from dust and also making the device more sightly. This casing will be provided with suitable means, such as the ears 3, for attaching it to the music-desk, stand, or other support. In the casing is a vertical spindle 4, which is mounted at its lower end in the floor 5 of the casing and at its upper end in a bridge-piece 6. This spindle is provided with coarse screw-threads and is non-rotatable, so that it constitutes a fixed threaded spindle or post. Mounted in the casing and concentric with the spindle are a plurality of swinging arms 8, four such arms being shown; but obviously there need only be two or any other desired number. These arms preferably will be mounted directly on the lower end of the spindle 4, which will be smooth, so as to provide for pivoting the arms thereon. These arms project out through slots 9 in the front of the casing and will be provided with suitable clips 10 for engaging the leaves of the music.

The device may be so arranged as to engage the leaves either at the top or on the bottom. When applied to a piano, as shown in Fig. 1, the leaves will preferably be engaged on the top, and to accommodate music of different heights the outer ends of the arms are bent downwardly, as at 11, and the clips 10 are vertically adjustable thereon, such as a frictional engagement with the arms, or, if desired, a further friction or binding effect may be secured by any suitable means. The arms will be made of flat pieces of metal, thus giving the maximum strength with minimum weight.

At their inner ends the arms are provided with L-shaped fingers or projections which lie in different horizontal planes, the projections of the several arms being marked 14, 15, 16, and 17, respectively. Rotatably mounted on the spindle 4 is a pulley or drum 18, which is internally threaded, so that when rotated on the spindle it will also travel up and down the latter. This drum carries two projections 19 and 20, arranged to engage the fingers or projections 14, 15, 16, and 17 on the arms 8. The pitch of the thread on the spindle is such and the projections 19 and 20 on the drum and the fingers 14, 15, 16, and 17 on the arms are so located relatively to each other that a half-revolution of the drum will cause one of the projections thereon to engage the finger on one of the arms and swing the arm from one side to the other, by which time the drum will have lowered or raised to such an extent that said projection will slip past the finger with which it engages, and then the next projection on the drum will be in position to engage the finger on the next arm, and so on, as will be readily understood. In this manner the arms can be swung in succession from one side to the other and in either direction, the device operating equally as well to return the arms as to advance them. In fact one arm can be swung over from one position to the other and then im-

mediately returned by merely reversing the rotation of the drum 18.

The drum 18 can be rotated by any suitable means, such as two cords or bands 21, which are fixed to the drum, and one or both of which is wrapped one or more times around the drum in opposite directions, so that when one unwinds the other winds up. The cords pass over guide-pulleys 23 and to a suitable operating drum or spool 24, which has connected thereto suitable arms or wings 25 for turning the same. When the device is applied to a piano or similar instrument, this operating-drum will preferably be mounted on the lower side of the keyboard projection in position to be engaged and operated by the knee of the performer.

When the device is applied to a music-stand, as shown in Fig. 5, the turning device will preferably be located on the bottom of the stand, so as not to overbalance the latter and will engage the leaves at their bottoms. The operating spool or drum 24 and wings 25 will be mounted on a suitable stand 26, which may be secured to the bottom of the music-rack or merely placed on the floor in position to be engaged by the foot of the performer.

It requires only a half-revolution of the drum 18 to swing the arm from one position to another. The pitch of the thread on the spindle 4 is such that the drum will move upwardly or downwardly sufficiently far during this half-revolution to cause its projections to pass either above or below the fingers of the arms. The operating drum or spool 24 preferably will be of double the diameter of the drum 18, so that a quarter-revolution thereof will be sufficient to swing one of the arms from one side to the other and enabling the use of a four-armed operating device.

The device as a whole is very compact and neat in appearance. The casing is closed at its top by means of a cover 27, so that dust and dirt cannot get into the operating mechanism, and the front is provided with the narrow slots 9, through which the thin flat arms project. The band for operating the same will pass from the drum 18 inwardly into the instrument and over the guide-pulleys 23 to the operating drum or spool. The latter is so located that it is easily accessible by the foot or knee of the performer, and as a consequence the latter need not pause to turn the leaves.

In the operation of the device we will assume that at the beginning all of the arms are directed toward the right. In this position the drum 18 will be at its highest position, with the projection 19 behind and in the same level with the finger 14 of one of the arms 8. When it is desired to turn the first leaf, the drum 24 will be given a quarter-turn. This will give the drum a half-turn, so that the projection 19 will catch the finger 14 and carry the same and the arm to which it is connected around to the left. As soon as it is given a full half-swing the drum 18 will have moved so far down on the threaded spindle 4 that the projection 19 will slip underneath the finger 14. The projection 20 on the drum will then be in position to engage the finger 15 on the next arm. If the drum be given a further half-revolution, this projection 20 will carry the finger 15 and the arm to which it is connected around to the left, and it will pass underneath said finger. The projection 19 will then be in position behind the finger 16 and will serve to swing this one to the left, and so on. In this manner all of the arms can be swung in succession from right to left by merely giving successive half-rotations to the drum 18. If it is desired to turn any or all of the leaves backward, the drum 18 will merely be rotated in the opposite direction. We will assume that the projection 19 has engaged the finger 14 and swung the arm therewith fully to the left. If it is now desired to return said arm before bringing any of the other arms to the left, the drum will merely be rotated in the opposite direction, thus causing it to travel slightly upwardly and causing the projection 20 to come behind the finger 14 and swing said finger, with its arm, back to its original position. In the same manner any of the arms can be swung back whenever desired, thus enabling the music to be turned back and forth in any desired manner. The L shape of the fingers 14, 15, 16, and 17 is important, since the projections 19 and 20 must pass both underneath or above the same.

What I clam is—

1. A leaf-turning device comprising a base or frame, a stationary threaded spindle mounted therein, a plurality of swinging arms mounted therein concentric with said spindle and lying in different planes transverse to the spindle, a body threaded internally and rotatable on said spindle and when rotated traveling longitudinally thereof, means on said body arranged to engage the arms in succession, and means for rotating said body in either direction.

2. A leaf-turning device comprising a base or frame, a stationary threaded spindle mounted therein, a plurality of swinging arms mounted therein concentric with said spindle and lying in different planes transverse to the spindle, a drum threaded internally and rotatably mounted on said spindle and when rotated traveling longitudinally thereof, means on said drum arranged to engage the arms in succession, and bands or cords connected to said drum for rotating the same.

3. A leaf-turning device comprising a base or frame, a stationary threaded spindle mounted therein, a plurality of swinging arms mounted therein concentric with said spindle and provided with projections termi-

nating in different planes, a body threaded internally and rotatably mounted on said spindle and provided with means for engaging the projections on said arms in succession, and means for rotating said body in either direction.

4. A leaf-turning device comprising a base or frame, a stationary threaded spindle mounted therein, a plurality of swinging arms mounted therein concentric with said spindle and provided with projections terminating in different planes, a drum threaded internally and rotatably mounted on said spindle and provided with means for engaging the projections on said arms in succession, and cords or bands connected to said drum for rotating the same.

5. A leaf-turning device comprising a base or frame, a stationary threaded spindle mounted therein, a plurality of swinging arms mounted therein concentric with said spindle and provided with fingers terminating in different planes, a drum threaded internally and rotatable on said spindle and provided with a pair of projections for engaging the fingers on the arms in succession, and means for rotating said drum.

6. A leaf-turning device comprising a base or frame, a stationary threaded spindle mounted therein, a plurality of swinging arms pivoted on said spindle and lying in different planes axially thereof, a drum threaded internally and rotatable on said spindle, means on said drum arranged to engage the arms in succession, and means for rotating said drum in either direction.

7. A leaf-turning device comprising a base or frame, a stationary threaded spindle mounted therein, a plurality of swinging arms mounted therein concentric with said spindle and lying in different planes transverse to said spindle, a drum threaded internally and rotatable on said spindle, means on said drum arranged to engage the arms in succession, a drum or spool, operating arms or wings connected thereto, and bands connecting said spool with the drum on the spindle.

8. A leaf-turning device comprising a base or frame, a stationary threaded spindle mounted therein, a plurality of swinging arms mounted therein concentric with said spindle and lying in different planes transverse to said spindle, a drum threaded internally and rotatable on said spindle, means on said drum arranged to engage the arms in succession, a drum or spool, operating arms or wings connected thereto, and two bands fixed to said drum or spool and to the drum on the spindle and wrapped around both.

9. A leaf-turning device comprising an inclosing casing provided with slots in its front face, a stationary threaded spindle mounted therein, a plurality of swinging arms mounted therein concentric with said spindle and projecting through the slots in the front of the casing, a drum threaded internally and rotatably mounted on said spindle, means on said drum arranged to engage the arms in succession, and means for rotating said drum in either direction.

10. A leaf-turning device comprising a base or frame, a stationary threaded spindle therein, a plurality of arms pivotally mounted in said frame or casing concentric with said spindle, L-shaped fingers on said arms, a drum threaded internally and rotatable on said spindle, projections on said drum arranged to engage the fingers on said arms in succession, and means for rotating said drum.

11. A mechanism for turning the leaves of a book or pamphlet comprising arms pivotally mounted on a frame, such arms having fingers which project each a small distance farther than that of the arm which follows in sequence, an operating member adapted to engage successively with the projecting tips of the above-mentioned fingers, a screw on which said operating member is mounted and means for rotating said operating member.

In testimony whereof I, the said WILLIAM EDWARD SIEGER, have hereunto set my hand.

WILLIAM EDWARD SIEGER.

Witnesses:
ROBERT C. TOTTEN,
J. R. KELLER.